

TROSHINA, V.P.; SHTURN, V.A.

Effect of low temperatures on isolated epithelial cells on white mice and frogs. Biul.eksp.biol.med. 42 no.7:63-66 J1 '56. (MLRA 9:9)

1. Iz laboratorii gistogiziologii (zav. - deystvitel'nyy chlen AMN SSSR D.N.Nasonov) Fiziologicheskogo instituta imeni A.A.Ukhtomskogo i Leningradskogo ordena Lenina gosudarstvennogo universiteta imeni A.A. Zhdanova (rektor - chlen-korrespondent AN SSSR A.D.Aleksandrov) Predstavlena deystvitel'nyy chlenom AMN SSSR D.N.Nasonovym.

(EPITHELIUM, physiology,

eff. of cold (Rus))

(COLD, effects,

on epithelium (Rus))

SHTURM, V.A., dotsent (Leningrad, Moskovskiy pr., d.148, kv.11)

▲ new method of surgical treatment of syndactyly. Vest.khir.  
79 no.12:118-119 D '57. (MIRA 11:1)

1. Iz kafedry detskoy khirurgii (zav. - prof. A.V.Shatskiy) Lenin-  
gradskogo pediatricheskogo meditsinskogo instituta.  
(FINGERS, abnorm.  
syndactyly, surg.)

/SHTURN, V.A., dotsent (Leningrad, Roz"yesszhaya ul., d.15, kv.19)

Oblique intertrochanteric osteotomy and transposition for  
correction of varus distortions of the femur neck. Ortop.  
travm. i protez. 24 no.6:57-58 Jp'63 (MIRA 16:12)

1. Iz Leningradskogo pediatricheskogo meditsinskogo instituta  
(rektor - dotsent Ye.P.Semenova).

SHTURN, V.A., dotsent

Deforming osteochondrosis of the tibia (tibia vara, Erlacher  
Blount disease) Ortop. travm. protez. 24 no.7:13-19 JI'63  
(MIRA 17:2)

1. Iz Leningradskogo pediatricheskogo meditsinskogo instituta  
(rektor - Ye. P.Semenova).

SHTURN, V.A., dotsent

Sudeck's syndrome in injuries and diseases of the extremities. Trudy  
LPMI 31 no.2:211-220 '63. (MIRA 17:10)

1. Iz Leningradskogo pediatricheskogo meditsinskogo instituta.

SHTURN, V.A., dotsent (Leningrad, F-126, Raz"yezzhaya ul., d.15,kv.19)

Carved bone grafts in the treatment of pseudarthroses and  
defects of tubular bones. Ortop., travm. i protez. 25 no.4:  
51-52 Ap '64 (MIRA 18:1)

1. Iz Leningradskogo pediatricheskogo meditsinskogo instituta  
(rektor - dotsent Ye.P. Semenova).

SHITUM, Ye. L. Cand Chem Sci -- "Triple semiconductors of compounds of the ABX type."  
Len, 1960. (Len Order of Lenin State Univ im A. A. Zhdanov) (KL, 1-61, 184)

-77-

SHTURMAN, A.A.

Simplification of the design forms for plastics. Med.prom. no.2:  
15-16 Ap-Je '55 (MLRA 9:12)

1. Instrumental'nyy tsekh Khar'kovskogo zavoda zubovrachebnykh material  
materialov.

(DENTISTRY, apparatus and instruments,  
presses & forms for plastics, construction)

(PLASTICS,  
dent., presses & forms for, construction)



SHTURMAN, A.A.

Universal form for pressing plastics. Med.prom. no.3:39-41 J1-S '55.  
(MLRA 9:12)

1. Khar'kovskiy zavod zubovrachebnykh materialov.  
(ACRYLIC RESINS,  
universal form for presses)

SHTURMAN, Aleksandr Abramovich; REVZIN, I.I., redaktor; SENCHILO, K.K.,  
~~tekhnicheskii~~ redaktor

[Technology of pressing parts from thermosetting plastic materials]  
Tekhnologiya pressovaniia izdelii iz termoreaktivnykh plastmass.  
Moskva, Gos. izd-vo med. lit-ry, 1956. 61 p. (MLRA 9:11)  
(Plastics)

137-58-4-7157

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 4, p 121 (USSR)

AUTHOR: Shturman, A.A.

TITLE: Experience in Partial Extrusion of Parts of Dies (Opyt chastichnogo vydavlivaniya detaley pressform)

PERIODICAL: Materialy po obmenu opytom i nauchn. dostizh. v med. prom-sti, 1957, Nr 4 (23), pp 112-113

ABSTRACT: Partial extrusion is used to make corrugations, individual depressions, polygonal shapes, and inscriptions on dies. Experiences in the introduction of this method under industrial conditions are described. Compared with machining, this method increases labor productivity, yields identical products of improved quality, diminishes the cost of the die, and saves metal.

V. F.

1. Dies--Extrusion 2. Metals--Extrusion--Applications

Card 1/1

SHTURMAN, A.A., inzh.; BEZUGOLYY, V.D., inzh.

Using self-hardening plastics for checking the precision of work-  
pieces. Mashinostroitel' no.9:41-42 S '57. (MLRA 10:9)

1. Khar'kovskiy zavod zubovrachebnykh materialov.  
(Machine-shop practice) (Plastics)

SHTURMAN A A

Rolling metal parts. Med. prom. 11 no.2:50-52 P '57 (MLRA 10:4)

1. Khar'kovskiy zavod zubovrachebnykh materialov.  
(ROLLING (METALWORK))

SHTURMAN, A.A.

Hard measured chromium plating of compression molds for plastics.  
Med.prom. 11 no.4:43-45 Ap '57. (MLRA 10:6)

1. Khar'kovskiy zavod zubovrachebnykh materialov.  
(CHROMIUM PLATING) (PLASTICS--MOLDING)

SHIUKHMAN, A.A.

AUTHOR: Shturman, A.A.

121-4-16/32

TITLE: Assembly of Moulds for Plastics and Hot Stamping Dies  
(Sborka press-form dlya plastmass i shtampov dlya goryachey  
shtampovki)

PERIODICAL: Stanki i Instrument, 1958, No.4, pp. 32 - 33 (USSR).

ABSTRACT: The finishing after heat treatment of moulds for plastics in the tool shop of the Khar'kov Dental Equipment Plant is carried out with the help of special plastic dummy pressings. Each half of the mould is used, together with a flat die to produce a pressing before heat treatment. This pressing is used as a master for grinding and polishing after heat treatment. If a grinding allowance is left before heat treatment, a plastic pressing is produced after heat treatment and removal of the grinding allowance. The two halves are bonded together and laid in the mould when the guiding columns and sleeves are fitted together. Commercial cold-hardening acrylate, as used in dental practice, is recommended to avoid the need for heating the moulds.  
There are 3 figures.

AVAILABLE: Library of Congress  
Card 1/1 1. Molds-Assembly

AUTHOR: Shturman, A.A. SOV/121-58-8-21/29  
TITLE: The Application of a Cold Hardening Plastic in the  
Manufacture of Press Tools (Primeneniye samotverdeyushchey  
plastmassy pri izgotovlenii shtampov)  
PERIODICAL: Stanki I Instrument, 1958, Nr 8, p 39 (USSR)  
ABSTRACT: Some details of the method of fixing punches and die  
inserts in die plates by means of a cold hardening plastic  
developed at the Khar'kov Works for Dental Equipment  
(Khar'kovskiy zavod zubovrachebnykh materialov) are given.  
The plastic used is AST-T, technical, cold hardening  
acrylate, a thermo-plastic material hardening at room  
temperature. Its cost is much lower than that of a low  
melting metallic alloy. Polymethyl Metacrylate powder  
with the addition of an initiator and a pigment is mixed  
in the ratio of 2 to 1 with a methyl metacrylate liquid

Card 1/2



SOV/121-58-8-21/29  
The Application of a Cold Hardening Plastic in the Manufacture of  
Press Tools

together with an activator. Leaving the paste to swell  
for 15 minutes it is ready for use and hardens after a  
further 20 minutes. During hardening, the surface should  
be covered with cellophane, to exclude air.

There are 2 figures.

Card 2/2

SHTURMAN, A.A.

Test molds of low-melting alloys for making plastic parts. Med.  
prom. 12 no.1:55-56 Ja '58. (MIRA 11:2)

1. Khar'kovskiy zavod zubovrachebnykh preparatov.  
(PLASTICS--MOLDING)

SHTURMAN, A.A.; BEZUGLYY, V.D.; MATS, L.N.

Making patterns of AST-T plastic. Med.prom. 12 no.4:50-52 Ap '58.  
(MIRA 11:5)

1. Khar'kovskiy zavod zubovrachebnykh materialov.  
(PLASTICS--MOLDING)

SHTURMAN, A.A.

Forms for molding experimental plastic items. Med.prom. 12 no.10  
43-46 0 '58 (MIRA 11:11)

1. Khar'kovskiy zavod zubovrachebnykh materialov.  
(PAISTICS--MOLDING)

SETURMAN, A.A.; ARONOV, Ye.G.; BEZUGLYY, V.D.; MATS, L.N.

Plastic dies for stamping and bending. Kuz.-shtam.proizv. 1  
no.6:41-42 Je '59. (MIRA 12:9)  
(Dies (Metalworking)) (Plastics)

15(8), 18(5)

AUTHOR:

SOV/128-59-9-13/25  
Bezuglyy V.D., Candidate of Chemical Sciences, Shturman A.A. and Mats L.N., Engineers

TITLE:

Repairing Castings with Self-Setting Plastics

PERIODICAL:

Liteynoye proizvodstvo, 1959, Nr 9, pp 43-44 (USSR)

ABSTRACT:

Defects of castings appearing in the form of gas-blisters and blowholes, both in ferrous and nonferrous metal castings, are usually repaired by gas-or-electric welding, filling by liquid metal, or by metallization with powdered metal. However, all these methods contain a number of shortcomings. A group of engineers at the Khar'kov Plant of Dental Surgery Materials Ye.G. Aronov, V.D. Bezuglyy, A.A. Shturman, L.N. Mats, M.Ya. Solomonov, engineers of the Khar'kov Tractor Works L.P. Seleznev, A.A. Ridnyy, B.A. Sevruk, and the Senior Teacher of KhPI, I.T. Garkusha have proposed a method of closing up the holes in castings by means of self-setting plastic mass AST-T. The mass consists of a powder and a liquid. The powder is an emulsive polymethylmetacrilat with benzoile peroxide; the liquid is methylmetacrilate with tertiary amine. The plastic mass

Card 1/3

Repairing Castings with Self-Setting Plastics

SOV/128-59-9-18/25

has the following physico-mechanical properties: heat-stability - 90° (according to Martens); hardness - 13-19 H<sub>B</sub>; specific gravity - 1.18 gr/cm<sup>3</sup>; specific tenacity - 8 to 12 kg/cm<sup>2</sup>; tensile strength - 450 to 500 kg/cm<sup>2</sup>; bending strength - 800-1400; limit of pressure strength - 1200 to 1600 kg/cm<sup>2</sup>. The filling process comprises the following operations. First of all, the holes are thoroughly cleaned with the liquid AST-T; the mass is prepared by mixing the powder with the liquid in a glass, faience or aluminum vessel, whereupon, it should stay 5 to 10 minutes until it swells. The ratio powder-liquid is 2:1 by weight for large holes, and 1:1 for small ones. After the filling, the repaired place be isolated from the air by means of cellophane. During the filling process, the castings should have a room temperature. The length of time required for consolidation of the mass is 10-15 minutes. The application of this method was recognized and accepted by a number of works, such as Khar'kov Tractor Works, Bezhitskiy Steel Works, Kramatorskiy Works of Hea-

Card 2/3

Repairing Castings with Self-Setting Plastics

SOV/128-59-9-18/25

vy Machine-Building, and many others, and proved a success.

Card 3/3



PHASE I BOOK EXPLOITATION

SOV/4003

Shturman, Aleksandr Abramovich

Plastmassy v instrumental'nom proizvodstve (Plastics in the Tool Industry) Moscow, Mashgiz, 1960. 80 p. 9,000 copies printed.

Reviewer: F.G. Dvoretzkiy, Engineer; Ed.: N.P. Onishchenko, Engineer; Chief Ed. (Southern Department, Mashgiz): V.K. Serdyuk, Engineer.

PURPOSE: This booklet is intended for technical personnel in the tool shops of machine-building plants.

COVERAGE: This booklet describes the use of plastics in the manufacture of tools and accessories. Information on the basic types of plastics is given and the techniques used in producing plastic measuring tools, dies, patterns for casting, etc. are explained. No personalities are mentioned. There are 25 references: 21 Soviet, 3 English, and 1 German.

Card 1/4

S/122/60/000/001/017/018  
A161/A130

AUTHORS: Shturman, A. A.; Babyreva, R. I.; - Engineers; Ayvazov, S. S.

TITLE: Abrasive honing tool with plastic for binder

PERIODICAL: Vestnik mashinostroyeniya, no. 1, 1960, 76-77

TEXT: The final finish of bores in connection rods in CM<sub>1</sub>A-1 (SMD-1) engines at the Khar'kov "Serp i molot" Plant is by honing on CC-113 and CC-97 (SS-113 and SS-97) honing machines. The rods are made of "45" steel. Until now the honing tools used were made of abrasive blocks with ceramic binder, of green silicon carbide ("M28" grade) with block dimensions 9 x 11 x 100 mm. The abrasives were glued into the arbors of the honing head with a bakelite glue and held for 24 h in an electric furnace. The binder was brittle, the hardness in blocks not equal, and it was impossible to obtain the wanted surface finish of the bores; the tools lasted for only 200-220 rods with class 8 surface finish in bore. The authors suggested abrasive blocks made a new binder - thermoplastic ACT-T (AST-T) (self-hardening acrylate). New blocks proved considerably more durable, and the surface finish improved. The making consists in the following (the components are given in quantities for 15 blocks): 140 g of the abrasive

Card 1/3

Abrasive honing tool with plastic for binder

S/122/60/000/001/017/018  
A161/A130

(electro-corundum with standard 120 grain) is carefully mixed with 22 g AST-T, than 2 g benzoyl, 4 g stearine and 15 g calcined soda are added, and all is carefully mixed again; 40 ml liquid AST-T is then poured into the mixture, stirred, and the mixture is left for 10-12 min in a closed vessel for soaking. The mixture passes three stages: 1) creamy state; 2) stretching into threads, high stickiness; 3) the mass stops sticking to hands but is yet plastic. Ready mass is put into the press mold (Fig.) consisting of a bottom plate (1), a die (2) and a punch (3). The mold is pressed with 50-70 kg/cm<sup>2</sup> pressure and left in the press for 20-25 min at 25-30°C room temperature. The blocks are fully hardened after this. They are boiled for 10 min to wash out soda and produce the necessary porosity. Such blocks may also be made with the AKP-7 (AKR-7) plastic (standard, specification "TU 1119-54") but the press mold has then been heated to 130-140°C and cooled. Ready blocks are glued to arbors with a plastic prepared in the following way: AST-T powder is mixed with liquid AST-T in proportion 2:1 and left for 8-10 min to soak. The glue is used in the maximum stickiness state. The arbors are heated to 70-80° on an electric plate, coated with a thin film of 3A-6 (ED-6) epoxy resin, a thin film of prepared AST-T glue is coated over the resin, the blocks are applied upon, and the arbors are heated to 170-180° during 2-3 min. The new blocks last for 800-1,000 rods, and the bore

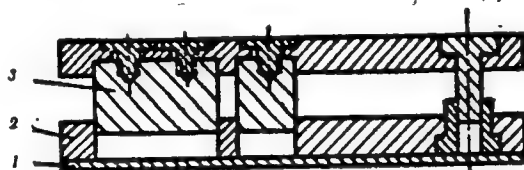
Card 2/3

Abrasive honing tool with plastic for binder

S/122/60/000/001/017/018

A161/A130

surface finish is class 9. No complex equipment is needed, and the cost of the new blocks is 2-3 times lower than of blocks with ceramic and bakelite binders, for the expensive "M28" abrasive is replaced by the cheaper EK no. 120 (EK no. 120, i.e., electro-corundum 120); honing with these blocks is possible in any medium (oil, kerosene or emulsion). There is 1 figure.



Card 3/3

SEITURMAN, A.A.

Peculiarities in the production of articles from capron in small-  
lot production. Med.prom. 14 no.2:34-38 F '60. (MIRA 13:5)  
(NYLON)

SHTURMAN, Aleksandr Abramovich; BEZUGLYY, Vasiliy Danilovich; FATS,  
Liya Naumovna; AL'PERIN, G.R., red.; GRIGOR'YEVA, I.S.,  
red. izd-va; BOL'SHAKOV, V.A., tekhn. red.

[Use of AST-T self-solidifying plastic in the manufacture of  
machinery] Samotverdeiushchaia plastmassa AST-T v mashino-  
stroenii. Leningrad, 1961. 29 p. (Leningradskii dom nauchno-  
tekhnicheskoi propagandy. Seriya: Sinteticheskie materialy,  
no.14) (MIRA 15:8)

(Plastics)

S/081/62/000/016/025/043  
B168/B186

**AUTHORS:** Bezuglyy, V. D., Mats, L. N., Shturman, A. A.

**TITLE:** A cold-hardening composition based on ACT (AST) acrylates

**PERIODICAL:** Referativnyy zhurnal. Khimiya, no. 16, 1962, 519, abstract .  
16P38 (In collection: Plastmassy v mashinostr. i  
priborostr. Kiyev, Gostekhizdat USSR, 1961, 105-112)

**TEXT:** The conditions of low-temperature polymerization of methylmetacrylate (I) were worked out for the production of cold-hardening compositions based on acrylate. The following were found to be most suitable: filler - finely divided emulsion of polymethylmetacrylate (PMMA), with a ratio PMMA : I = 10 : 4-5, initiator - a redox system [benzoyl peroxide (II) 0.4 %, dimethylaniline (III) 2 %], temperature 28-35°C, initiation time 10-11 min. The effects on initiation velocity of the quantity of II and III, temperature, polar solvent admixtures and acids were investigated. It was shown that negligible quantities of polar solvents (water, alcohol etc.) and acids (formic, metacrylic etc) increase the initiation velocity. On the basis of the results obtained the following formulations

Card 1/2

A cold-hardening composition...

S/081/62/000/016/025/043  
B168/B186

were worked out for compositions to be used in medicine - marks AST (reducing agent dimethylparatoluidine, which increases the light stability of plastics) and in industry - marks ACT-T (AST-T) (in parts by weight): powder 2 (emulsion of PMMA 97, II 1.5, ZnO 1.5), liquid 1 (I 97 and III 3). In order to improve its adhesive properties the plastic AST-T was modified with epoxy resins. Constitution of the resultant composition ACT-T3 (AST-TE) (in parts by weight): powder 2 (PMMA 9, II 2, and ZnO 1.5) and liquid 1, containing 7 epoxy resin 3A-5 (ED-5) or 3A-6 (ED-6), I 70, metacrylic acid 20 and III 3. The physical, mechanical and electrical properties of articles made from AST-T compositions are given. [Abstracter's note: Complete translation.]

Card 2/2



S/653/61/000/000/012/051  
1007/1242

AUTHORS: Shturman, A.A., Bezuglyy, V.D., and Mats, I.N.

TITLE: The application of self-hardening ACT-T (AST-T) plastics in machinery construction

SOURCE: Plastmassy v mashinostroyeni i priborostroyeni.  
Pervaya resp. nauch.-tekhn. konfer. po vopr. prim.  
plastmass v mashinostr. i priborostr., Kiev, 1959.  
Kiev, Gostekhnizdat, 1961, 113-125

TEXT: A new self-hardening plastic of the ACT-T (AST-T) type, containing acrylic acid and 10 to 40% SA-6(ED-6) epoxy resin is used to repair casting defects, in the manufacture of casting patterns supporting ribs for large-size wooden patterns, molding templates, for the production of semi-permanent press-molds in the lost-wax casting process, and in forging. A new electroconductive plastic of the

Card 1/2

S/653/61/000/000/012/051  
I007/I242

The application of cold-hardening...

same type has shown good results. AST-T self-hardenizing plastics do not contain toxic hardeners and their production cycle is much shorter. They harden at room temperature and have the technological advantage of responding to a low pressure. There is 1 table. ✓

Card 2/2

S/128/61/000/003/008/008  
A054/A127

AUTHOR: Shturman, A. A.

TITLE: Semi-permanent plastic dies for precision casting patterns

PERIODICAL: Liteynoye proizvodstvo, no. 3, 1961, 35 - 36

TEXT: In the Kharkovsk zavod zubovrachebnykh materialov (Kharkovs Factory of Dental Materials) a new, self-setting plastic material (ACT-T = AST-T) has been compounded for semi-permanent precision casting dies. It consists of a pulverous and finely dispersed, polymethyl-methacrylate emulsion, containing as initiator, benzoyl peroxide and liquid methacrylate with tertiary amine as activator. Methyl-methacrylate in the AST-T compound is polymerized at normal temperatures by the oxidizing-reducing system of benzoyl-peroxide-tertiary ammonia, containing free radicals which induce the cold polymerization process. When mixed with water, the compound swells and a plastic mass is obtained which settles at room temperature. The die material is prepared by adding 0.5% benzoyl peroxide to 100 parts AST-T powder by weight and mixing it with 45 - 50 parts heat conductive binding agent (silver graphite, aluminum or ferrous powder, АПЖТ-А, ТУ-А-001 = АРЗНМ-А,

Card 1/2

S/191/61/000/003/011/015  
B124/B203

AUTHORS: Shturman, A. A., Yefoyan, A. S.

TITLE: Production of molds for plastics by molding liquid metal alloys

PERIODICAL: Plasticheskiye massy, no. 3, 1961, 60-63

TEXT: At present, several methods are used to produce semisolid (provisional) molds from gypsum, plastics, wood, etc. for molding and casting plastics under pressure; but only comparatively small amounts can be molded, and the accuracy of dimensions of the products does not exceed that of the 7th class. In recent years, successful work has been done in Czechoslovakia for the production of molds for plastics from liquid Zn, Al, Cu, and Mg alloys. In 1960, the authors introduced this method at some Khar'kov plants (Plant for Dental Material, "Serp i Molot" Plant, etc.); an alloy of 97% Zn and 3% Al was used. The properties of the molded material are: Brinell hardness: 75 kg/mm<sup>2</sup>, specific impact strength: 7 kg·cm/mm<sup>2</sup>, tensile strength: 25 kg/mm<sup>2</sup>, relative elongation: 3%, and temperature of complete melting: 460 - 480 °C. Patterns are made of steel ✓

Card 1/3

Production of molds for...

S/191/61/000/003/011/015

B124/B203

or brass, taking account of the shrinkage of plastics. The alloy is molded in a special device (Fig. 1). Fig. 2 shows a device for molding the dies for the die casting of a plastic stopper. The production of molds of complicated shape for the molding of gears is described as an example for the application of the method. The material used for the production of molds can be re-cast and re-used several times. Die-cast polycaprolactam, polyethylene, polystyrene, Etrol, etc. parts can be produced with these molds, whereas the materials  $\text{M1 (L1)}$ ,  $\text{M2 (L2)}$ , AKP-7 (AKR-7), polyvinyl chloride, etc., are worked by compression molding; they are also suitable for epoxy resins, polyesters, ACT-T (AST-T), etc. There are 8 figures and 1 Soviet-bloc reference. ✓

Card 2/3

Production of molds for...

S/191/61/000/003/011/015  
B124/B203

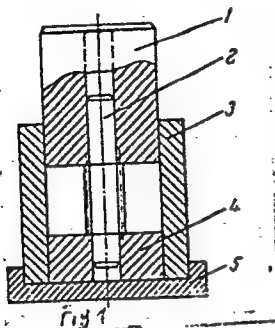


Fig. 1

Legend to Fig. 1: Device for molding the alloy. (1) Die, (2) pattern, (3) cylinder, (4) seal, (5) plate.

Card 3/3

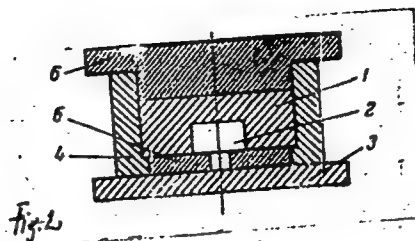


Fig. 2

Legend to Fig. 2: Device for molding the dies for die casting of plastic stoppers. (1) Alloy (die), (2) pattern, (3) supporting plate, (4) steel cylinder, (5) seal, (6) die.

15.8440

24749  
S/191/61/000/007/007/010  
B1C1/B215

AUTHORS: Shturman, A. A., Dem'yanenko, I. D.

TITLE: Magnesite molds for products of cold-setting plastics

PERIODICAL: Plasticheskiye massy, no. 7, 1961, 26-27

TEXT: Based upon the fact that cold-setting plastics (epoxy and polyester resins, ACT-T (AST-T) acrylic plastic, etc.) have found increasing application in the manufacture of large-size objects, such as boats, car bodies, and machine parts, the suitability of the various materials for molds is discussed. Gypsum withstands only 1-3 processes; easily meltable alloys are too expensive, and wood and metal molds require much time and expensive devices. The authors availed themselves of the experience of the Leningradskiy zavod stankov-avtomatov (Leningrad Plant of Automatic Machines) regarding magnesite molds for precision casting, and suggest such molds for casting plastics. A model made of wood, glass, plastic, metal, etc. is polished, coated with AU-1 (ATs-1) and FG-2 (FG-9) varnishes, and then put into a mold frame. 2.4 parts by weight of an aqueous solution of magnesium chloride (specific gravity of 1.3-1.32) is

Card 1/2

24749

S/191/61/000/007/007/010  
B101/B215

Magnesite molds for products of...

stirred into a mixture consisting of 1 part by weight of marshallite and 2 parts by weight of caustic magnesite of type GOCT 1216-41 (GOST 1216-41). The mass is then poured into the mold frame. At room temperature, the mass hardens within 4-8 hr. The mold is then polished with a felt disk soaked with paraffin or stearin. Such molds were used for pressing products of the acrylic plastic AST-T under pressures of 70-90 kg/cm<sup>2</sup>. The advantages of these molds are: 1) smooth surface of the pressed plastic; 2) durability of the mold; 3) broken molds can be used again after gluing with БФ-2 (BF-2) БФ-4 (BF-4) etc; 4) low cost of the material. Magnesite molds are also recommended for use in vacuum and pneumatic molding of plastic sheets. At present, the authors are attempting to produce pressure castings of caprone, polystyrene, and polyethylene by such magnesite molds. There are 2 figures.

Card 2/2



1 1350 2808 1454 1413 26995 S/191/61/000/009/005/007  
15 8070 B110/B218

AUTHOR: Shturman, A. A.

TITLE: Self-hardening acryl plastics in stamp constructions for cold stamping

PERIODICAL: Plasticheskiye massy, no. 9, 1961, 38-42

TEXT: Special compositions (e. g., ТЛК-Э (TLK-E)) have recently been used besides epoxy, polyester, and phenolformaldehyde resins for the production of drawing and bending stamps. In contrast to the difficult application of these plastics, the АСТ-Т (AST-T) plastic produced by the Khar'kovskiy zavod zubovrachebnykh materialov (Khar'kov Plant of Dental Materials) is versatile in its service. It is used for fastening punches in punch holders, producing stripper plates, punching and cutting stamps, as well as drawing and bending stamps. It is produced by mixing pulverized polymethyl methacrylate with initiator and pigment addition, with liquid methyl methacrylate and activator. Its physicomechanical properties are: specific gravity = 1.14-1.18 g/cm<sup>3</sup>; strength limit, kg/cm<sup>2</sup>, during

Card 1/6

Self-hardening acryl plastics in stamp ... <sup>26995</sup> S/191/61/000/009/005/007  
B110/B218

compression = 1200 - 1600, during elongation = 450 - 500, during bending  
= 800 - 1200; specific impact strength = 8 - 12 kg·cm/cm<sup>2</sup>; Brinell hardness  
= 13 - 19 kg/mm<sup>2</sup>; thermal stability according to Martens = 90°C; water  
absorption = 0.14%; shrinkage during hardening = 0.4 - 0.6%. AST-T  
hardens at 20 - 25°C at 10 - 50 kg/cm<sup>2</sup>, if necessary also without pressure  
during 30-40 min. The use of AST-T is very convenient, and the costs are  
only 1/10 of the usual ones. First, the punch holders and punches are  
prepared (Fig. 1), then the lining follows (Fig. 3). The punch holder is  
marked, and the window of any shape (3-4 mm larger than that of the punch)  
is drilled out. Then, the recesses are milled out. For better adhesion  
of the plastic, the wall surface should be ragged, and grooves are cut  
into the punch. Before casting, punch and punch holder are degreased by  
means of AST-T liquid. AST-T powder and liquid are mixed in the ratio of  
1:1 or 0.8:1, soaked for 4-5 min, and cast. Casting of stripper plates  
by means of AST-T reduces the production costs, and increases the  
precision of stamps. AST-T is used at the L'vovskiy mashinostroitel'nyy  
zavod (L'vov Machine Building Works). Punches secured with AST-T are as

Card 2/6

Self-hardening acryl plastics in stamp ... 26995 S/191/61/000/009/005/007  
B110/B218

durable as the whole stamp. 20-25% time is saved, precision is improved,  
 and the fastening of punches that are close to each other is simplified.  
 The Moskovskiy elektromekhanicheskiy zavod No. 1 (Moscow Electromechanical  
 Plant no. 1) saved 4387 rubles with 33 kg of AST-T, the Izhevskiy zavod  
 (Izhevsky Plant) 2480 rubles with 30 kg. V. D. Bezuglyy, L. M. Mats, and  
 A. A. Shturman suggested a modified AST-T composition for increasing the  
 adhesion properties; Epoxy resin and methacrylic acid are introduced in  
 the AST-T monomer containing dimethyl aniline. Ye. G. Aronov, V. D.  
 Bezuglyy, G. P. Goncharenko, V. L. Karpin, L. M. Mats, and A. A. Shturman  
 suggested a method of producing stamps from AST-T for relief stamping and  
 bending of nonferrous metal or pickled 1.0 - 1.5 mm steel parts. For use  
 with a rubber punch, the matrix is manufactured as follows: The master  
 model is placed freely in the center of the mold box. AST-T is prepared  
 as indicated; but only after 10-12 min, it is applied, in pasty state, to  
 the master model greased with vegetable oil. After 30-35 min at  
 30 - 50 kg/cm<sup>2</sup>, the matrix is taken out and cleaned from seams. Besides  
 pure AST-T, AST-T filled with gypsum up to 40% (compressive strength:

Card 3/6

Self-hardening acryl plastics in stamp ... 26995 S/191/61/000/009/005/007  
B110/B218

800 - 1000 kg/cm<sup>2</sup>) may be used for nonferrous metal drawing: 60% by weight of AST-T powder is mixed with 40% by weight of pure, finely ground gypsum; the mixture is mixed with AST-T liquid in the ratio 1:1. Glass-fabric reinforcements considerably increase the strength of the stamp. 250 tons of Pb and Sn have thus been saved at the Khar'kovskiy mashinostroitel'nyy zavod (Khar'kov Machine Building Works). Old, solid AST-T may be added to new plastic as a high-quality filler. An experience of four years gained at various Soviet plants speaks in favor of the use of AST-T. There are 9 figures and 1 Soviet reference.

Fig. 1. Punch holder with two punches fastened by means of AST-T plastic.

Fig. 3. Centering of the punch in the matrix, and its mounting by means of plastic. Legend: (1) Matrix, (2) punch, (3) punch holder, (4) supporting ledges, (5) plastic, (6) clearance.

Card 4/6

SATURGAN, A.A.; YEFROYAN, A.D.; ASNINA, M.I.; BATOVSKAYA, T.A.

Models of current conducting plastics. Mashinostroitel'  
no.9:41 S '62.

(Plastics)

(MIRA 15:9)

SHTURMAN, A.A., inzh.

New techniques for lining metal pipes with plastics. Mashinostroenie  
no.3:79-81 My-Je '62. (MIRA 15:7)

1. Khar'kovskiy zavod zubovrachebnykh materialov.  
(Pipe, Steel) (Plastics—Molding)

SHURMAN, A.A.

Drill jigs made of cold-hardening plastics. Stan.i instr. 33  
no.11:34-35 N '62. (MIRA 15:11)  
(Jigs and fixtures) (Plastics--Molding)

S/191/63/000/003/017/022  
B101/B188

AUTHORS: Shturman, A. A., Troyanovskiy, L. M.

TITLE: Method of rotational molding of ACT-T (ACT-T) plastics

PERIODICAL: Plasticheskiye massy, no. 3, 1963, 59.- 61

TEXT: Rotational molding of AST-T plastic made up of a powder mixed with a liquid in a ratio of 1 : 1 is suggested. After 4 - 5 min a liquid mass forms which cures at room temperature. The mold for this method can be attached to any metal working machine and thereby caused to revolve. The formula  $n = 2000/\sqrt{R \cdot \delta}$ , where R is the external radius of the cast sample, and  $\delta$  is its wall thickness, holds for the speed of revolution, rpm. The density of the plastic is assumed to be  $\sim 1$ . Lining of iron tubes with AST-T plastic is described in brief. The inner wall of the tube is grooved to increase the adhesion of plastics. Compressed air is blown through tubes measuring 150 mm diameter or more, in order to accelerate the removal of gaseous products formed during the process of curing. The material cures after 30 min - 1.5 hrs depending on the thickness of lining. A simple tube into which the corresponding exchangeable inserts are put is sufficient for

Card 1/2



SHTURMAN, A.A., inzh.; ARONOV, Ye.G., inzh.

Hydraulic press units for plastics operating at a low pressure.  
Mashinostroenie no.5:41-42 S-0 '63. (MIRA 16:12)

SHTURMAN, A.A.

Electroplated plastic equipment. Mashinostroitel' no.12:24-  
25 D '63. (MIRA 17:1)

SHTURMAN, A.A.

The design of punching dies with the use of cold setting  
acrylic plastics. Kuz.-shtam. proizv. 5 no.11:23-26,28  
N '63. (MIRA 17:1)

SETURIAN, A.A.; KOTLIK, A.M., inzh., retirement

[Cold-setting acrylic plastics in the manufacture of tools] Kholodnotverdeishchie akrilovye plastmassy v instrumental'nom proizvodstve. Inzh.2., perer. i dop. Moskva, Mashinostroenie, 1964. 186 p. (NTP 18:1)

SHTURMAN, A.A.; inzh.

Plastics for preventing the self-unscrewing of threaded joints.  
Mashinostroenie no.1:13 Ja-F '64. (MIRA 17:7)

SHTURMAN, A. A.

Use of plastics for the protection of threaded joints against  
spontaneous loosening. Plast. massy no.5:65-66 '64. (MIRA 17:5)

SHTURMAN, A.A.

Preventing threaded joints from self-unscrewing with the aid  
of plastics. Ratsionalizatsiia 14 no.8:19-20 '64.

SHTURMAN, A.A.

Repairing plastic instrument parts with cold-hardening plastics.  
Priborostroenie no.6:23-24 Je '64. (MIRA 18:3)



SHTURMAN, A.A., inzh.

Using plastics for obtaining negative impressions of ground-out  
holes in determining the wear of machine parts. Vest.mashinostr.  
45 no.2:39-40 F '65. (MIRA 18:4)

SHTURMAN, A.A.

Fitting device. Mashinostroitel' no.7:15 J1 '65.  
(MIRA 18:7)

SHTURMAN, G. I.

D1.R  
C2q.R  
E3.R

In 1938 defended his thesis "Induktsionnyye mashiny v sisteme elektricheskikh voln (sel'siny)" for degree of Doktor tekhnicheskikh nauk at Moskovskiy energeticheskiy institut imeni Molotova.

*#Anti Power Engineering Moscow*

Source: Elektrichestvo, 1947, No. 12, p. 58.

P-4198

LIST AND INDEX																										LIST AND INDEX																									
SUBJECTS AND PROPERTIES INDEX																										SUBJECTS AND PROPERTIES INDEX																									
SA																										B 64 6																									
<p>Induction motors with open magnetic circuit. * Russian            MAN. G. I. <i>Elektricheskoe</i> (No. 10) 43-50 (1946) in            Russian. — Asynchronous motors of "magneto-fugal"            type, i.e. with arc-shaped or flat stators, are described.            Their use is indicated for directly coupled operation with            variable speed mechanisms, and a complete analytical            and experimental investigation is given. A. L.            621.313.333 : 621.3.018.14 — 82 1900</p>																																																			
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION																																																			
SUBJECTS AND PROPERTIES INDEX																										SUBJECTS AND PROPERTIES INDEX																									
SUBJECTS AND PROPERTIES INDEX																										SUBJECTS AND PROPERTIES INDEX																									

SA

BC 67  
1

The problem of frequency regulation of asynchronous motors. SUTURMAN, G. I. *Vestn. Elektromash. (No. 12) 8-16 (1946) In Russian.*—It is proposed to start, brake and vary the speed of an asynchronous motor by frequency change of the supply. A detailed mathematical analysis is presented, and graphical solution methods are indicated to obtain values for relative slip, stator current, torque, etc.

A. L.

ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION

SECONDARY GROUPS										TERTIARY GROUPS									
SECONDARY GROUPS										TERTIARY GROUPS									
SECONDARY GROUPS										TERTIARY GROUPS									

1ST AND 2ND ORDERS																										3RD AND 4TH ORDERS																									
PROCESSES AND PROPERTIES INDEX																										1ST AND 2ND ORDERS																									
SA																										B C																									
621.313.333 - R2																										2149																									
<p>"Edge effect" in induction motors with open magnetic field. SUTTERMAN, G. I., AND ARONOV, R. L. <i>Elektricheskoe</i> (No. 2) 54:9 (1947) In Russian.—An analytical investigation of asynchronous motors with open arc-shaped and flat stators is presented. Formulae for secondary currents and their time relation to primary currents are derived, and shown to yield, compared with conventional motors, an additional "edge" effect pulsation with twice the primary frequency independent of rotor velocity.</p>																																																			
621.313.333 : 621.316.726 :																																																			
621.316.718 in R2 see Abstr. 2192																																																			
ASME-SLA METALLURGICAL LITERATURE CLASSIFICATION																																																			
FROM 1ST ORDER																																																			
1ST AND 2ND ORDERS																																																			

SHTURMAN, I. G., Prof

PA 17/49T11

USSR/Electricity  
Electrical Equipment  
Commutators

Jun 43

"Review of G. N. Petrov's, 'Electric Machinery,'"  
Prof I. G. Shturman, Dr Tech Sci, Khar'kov  
Electrotech Inst, 1 3/4 pp

"Elektrichestvo" No 6

Favorable review of Part II, "AC and DC Commutator  
Machines." Approved by Ministry of Higher Edu-  
cation USSR as textbook for power and electrical  
technology VTUZ and faculties. Published by  
Gosenergoizdat 1947, 329 pp, 10,000 copies, 12  
rubles 60 kopeck.

17/49T11

3.11.11, 1.1.

Shchurman, I. I. "Parameters of distributed coils", Sbornik nauch.-tekhn. statey Khar'k. elektrotekh. in-ta, Issue 7, 1948, p. 71-75.

So: U-6261, 10 April 53; (Letopis 'Zhurnal 'nykh Statey, No. 12, 1949).



SHCHERBA, G. I.

Shcherba, G. I. "The air machine with pole and plane stators", *Sootnik nauch.-tekhn. slobozhar'k elektrotekhn. in-ia*, Issue 7, 1948, no. 178-200.

So: 8-001, 10 April 53, (Letopis 'Zhurnal'nykh Statey, No. 12, 1949).

CHITRE 1, 1. 1.

Shkharov, G. M. "Induction machines with a disconnected magnetic circuit in short-circuit conditions", Sbornik nauch.-tekhn. statey Khark. elektrotekhn. in-ta, Issue 7, 1948, . 301-13.

So: N-3261, 10 April 51, (Letopis 'Zhurnal 'nykh Statey, No. 12, 1949).

SHILIN, S. I.

Saturan, G. "An electric synchronous generator driving shock mechanism", Sbornik  
nauch.-tekhn. statey Khar'sk. elektrotekhn. in-ta, Issue 7, 1948, p. 232-42.

So: U-3201, 10 April 53, (Letopis 'Zhurnal 'nykh Statey, No. 12, 1949).

SHTURMAN, G. I., Prof.

PA 196T46

USSR/Electricity - Motors, Induction Sep 51

"Opened Squirrel Cages in Squirrel-Cage Induction Motors," Prof G. I. Shturman, Dr Tech Sci, Riga

"Elektrichestvo" No 9, pp 36-44

Discusses new systems for opening the end rings in cast squirrel cages of squirrel-cage machines. Expts in the practical use of the new types of open squirrel cages show that they improve the starting qualities of the motor considerably. Submitted 16 Oct 50.

196T46

SHURMAN, G.I.

621.313.322

4897. Variable-speed generators for rectifier loads.  
G. I. SHURMAN. *Voprosy energetiki*, 1, 85-95 (1952)

It is pointed out that low-power wind-driven generators and those for train and car lighting are d.c. machines of special design to achieve the desired self-regulation of current over a wide speed variation. These machines can be replaced with polyphase synchronous generators operating in association with modern rectifier equipment, the self-regulation being obtained at the expense of increased machine reactance. A mathematical analysis of the design of such machines is given. Formulae are derived to show that for a given generator output and speed, an increased number of poles results in the reduction of stator and rotor copper and iron weights, winding losses and excitation power, and in increased iron losses. For aircraft generators, the use of increased frequency materially reduces their weight. A claw-like form of rotor construction for this purpose is mentioned.

I. MCKERROW

SHTURMAN, G.

621.313.2-8 : 625.23

5016. Electrical machines for the electrical equipment of railway carriages. G. SHTURMAN, V. APSIT AND A. KROGERIS. Latv. PSR-Zinatnes Akad. Vestis, 1952, No. 3, 93-113. In Russian.

The main requirements to be satisfied by the carriage lighting equipment are stated. Operation and characteristics of a cross-field d.c. generator are compared with those of a synchronous generator feeding the circuit through rectifiers; the latter system fulfils the above requirements. Results of laboratory tests are reported. Practical tests on railway coaches are recommended.

A. KARLSHAD

② *[Handwritten signature]*

112-3-5987

Translation from: Referativnyy Zhurnal, Elektrotehnika, 1957, Nr 3, p. 135 (USSR)

AUTHOR: Shturman, G. I.

TITLE: Prospects of Using A-C Generators for Supplying Power to Railroad Passenger Cars (Perspektivy primeneniya generatorov peremennogo toka dlya elektropitaniya passazhirskikh vagonov)

PERIODICAL: In Sbornik: Materialy nauch.-tekhn. soveshchaniya po tyagovomu elektrooborudovaniyu, November 1953, Riga, 1955, pp. 106-117.

ABSTRACT: The use of an a-c electric power supply system for illumination of passenger cars is proposed, since the d-c equipment in use at the present time does not reflect the level of development of Soviet passenger car construction. The use of a three-phase synchronous generator in place of d-c generator  $P\Delta - 2\Gamma$  and semiconductor rectifiers has the following advantages: the power output is increased up to 7.5-8 kw (twice that of the  $P\Delta - 2\Gamma$ ); the size of the machines is decreased; copper and steel requirements are reduced by 60% and 25%, respectively; the number of parts required is reduced by a factor of three; greater reliability in operation is obtained. On the basis of stand tests and theoretical studies, the new system is recommended for operational tests.

I. V. I.

Card 1/1

SHTURMAN, G.I., doktor tekhnicheskikh nauk, professor; APSIT, V.V., inzhener.

"Historical survey of the development of electric machinery." S.A.Gusev.  
Reviewed by G.I.Shturman, Apsit, V.V. Elektrichestvo no.4:92-93 Ap '56.  
(Electric machinery) (Gusev, S.A.) (MLRA 9:7)



VASHURA, B.F.; STUPEL', F.A.; SHTURMAN, G.I.; BERGER, A.Ya.; LYUTER,  
R.A.; YEREMEYEV, A.S.

Professor O.B. Bron. Elektrichestvo no.5:94 My '56. (MLRA 9:8)  
(Bron, Osip Borisovich, 1896-)

SHTURMAN, G.I., doktor tekhnicheskikh nauk, professor.; YAKUBAYTIS, E.A.,  
kandidat tekhnicheskikh nauk.; KROGERIS, A.F., kandidat tekhnicheskikh  
nauk.; APSIT, V.V., kandidat tekhnicheskikh nauk.

A new system of autonomous power supply for railway passenger cars.  
Elektrichestvo no.3:39-43 Mr '57. (MIRA 10:4)

1. Institut energetiki i elektrotehniki Akademii nauk Latvyskoy  
SSR.

(Railroads--Electric equipment)

SHTURMAN, G. I.

1856. THE EQUIVALENCE OF INDICATOR SELSYNS TO SINGLE-PHASE ROTARY TRANSFORMERS. G. I. Shurman. Elektrichestvo, 1957, No. 4, 63-8. In Russian.

An arrangement of two selsyns with single-phase rotors and three-phase stators is analysed. One is a transmitter, the other is a receiver and there is an angle of misalignment between the rotors. It is shown that the three-phase windings of the stators are equivalent to single-phase windings situated on an axis bisecting the misalignment angle. Such a machine having a single-phase rotor and single-phase stator is called a rotary transformer by the author. This theoretical approach makes it possible to derive a simplified formula for the aligning torque of a selsyn. 10 references, all Russian.

A. Woroncov

BRON, O.B.; BEL'KIND, L.D.; SHUBMAN, G.I.; KAMENOVA, V.A.; BERGER, A.Ye.;  
CHERNICHKIN, D.S.; TISHCHENKO, N.A.; BORISKO, N.I.; BERTINOV,  
A.I.; SINEL'NIKOV, Ye.M.

Pavel Petrovich Kopniaev; 25th anniversary of his death. Elektrichestvo no.5.92 My '57. (Muzh. 10:6)  
(Kopniaev, Pavel Pertovich, 1867-1941)

A. I. Shturman, G. I.

AUTHOR: SHTURMAN, G. I., Prof., Dr. techn. sc. (Riga) 105-3-6/20  
TITLE: Transformer Operation of Selsyns. (Transformatornyye rezhimy sel'sinov, Russian)  
PERIODICAL: Elektrichestvo, 1957, Nr 8, pp 32 - 37 (U.S.S.R.)  
ABSTRACT: Practical methods for the calculation of the input and output data of the fundamental types of cascades of transformer correcting devices are obtained here on the basis of elementary relations of the general four-pole theory. The sufficient accuracy of the calculations according to the final formulae which were very much simplified (neglection of the magnetizing currents in the short-circuit parameters) is demonstrated. The possibility is illustrated of a calculation of all electric and magnetic relations, inclusive of the taking into account of losses in the three-phase windings, according to the parameters of the system of action of a synchro-cascade with monophas-input and quadrature-reversing windings in the secondary circuit. The identity of the physical processes and the conditions of symmetry in the transformer correcting devices and in the sine and cosine reversing transformers. (5 illustrations, 8 Slavic references)  
is shown  
ASSOCIATION: Not given  
PRESENTED BY:  
SUBMITTED: 27.11.1956  
AVAILABLE: Library of Congress  
Card 1/1

AUTHOR:

1) Cand. Techn. Sc. V.V. KAPLAN, Cand. Techn. Sc. . 105-8-17/20  
NASHATYR', V.M.

2) Dr. Techn. Sc. Prof. G.I. SHTURMAN, Cand. Techn. Sc. E.A. YAKUBAYTIS,  
Cand. Techn. Sc. A.F. KROGERIS, Cand. Techn. Sc. V.V. APSIT,  
Cand. Techn. Sc. A.G. ZDROK, Cand. Techn. Sc. Ass. Prof. G.P. SMIRNOV

TITLE:

- 1) On the Testing of Current-Limiting High-Frequency Fuses in  
an Oscillatory Circuit. (Ispytaniye vysokovol'tnykh tokoogra-  
nichivayushchikh predokhraniteley na kolebatel'nom konture)
- 2) On the Work of the Saturation Impedance with a Semiconductor  
Rectifier and Active Induction Load. (Rabota drosselya  
nasyshcheniya s poluprovodnikovym vypriamitelem i aktivno-  
induktivnoy nagruzkoy)

PERIODICAL:

Elektrichestvo, Nr 8, pp 74 - 77 (U.S.S.R.) , 1957

ABSTRACT:

- 1) Refers to the article by both authors in Elektrichestvo, 1956,  
Nr 5. Reference is made to the letter by Dr. A. Myslitskiy  
(Poland). The latter writes that only symmetrical short-  
circuit current curves are given in the article, whereas  
in a number of cases especially difficult conditions develop  
for the switching off of an arc in a high-frequency fuse, due  
to the presence of an aperiodic component in the short-circuit  
current. The authors announce that in later works a system  
was used by means of which investigations can be made on

Card 1/2

105-8-17/20

- 1) On the Testing of Current-Limiting High-Frequency Fuses in an Oscillatory Circuit.
- 2) On the Work of the Saturation Impedance with a Semiconductor Rectifier and Active Induction Load.
- 1) The circuit-breaking capacities of the current-limiting fuses in an oscillatory circuit not only in the case of symmetrical short-circuit current curves, but also in the presence of an aperiodic component in the current curve. (2 illustrations)
- 2) Refers to the article by A.G.Zdrok and G.P.Smirnov in Elektrichestvo, 1956, Nr 10. Zdrok and Smirnov are reproached by the first four above-mentioned authors the following: it is only in the third part of the paper that a concrete statement of problems may be comprehended; it is completely unintelligible which problem is exactly treated in the first part of the paper; why they cite data by Komar and Kaganov as their own; the paper is only a great disorder without giving any solution. The authors state that they only wanted to give recent data and point out experiments without describing them. (With 2 Slavic references)

Card 2/2

SHTURMAN, G.I., doktor tekhnicheskikh nauk, professor; YAKUBAYTIS, B.A.,  
kandidat tekhnicheskikh nauk; KROGHERIS, A.F., kandidat tekhnicheskikh nauk; APSIT, V.V., kandidat tekhnicheskikh nauk.

Operation of a saturation choke coil having a transistor rectifier  
and active inductive loading. Elektrichestvo 8:75-77 Ag '57.

(MIRA 10:9)

1. Laboratoriya elektromekhaniki Instituta energetiki i elektro-  
tekhniki Akademii nauk Latvyskoy SSR.

(Electric coils)



8(0)

SOV/112-59-4-6998

Translation from: Referativnyy zhurnal. Elektrotehnika, 1959, Nr 4, p 81 (USSR)

AUTHOR: Shturman, G. I.

TITLE: V. T. Kas'yanov's Method in Calculating Steady-State Conditions of Salient-Pole Synchronous Machines

PERIODICAL: Tr. In-ta energ. i elektrotekhn., AS Latviyskaya SSR, 1958, Nr 6, pp 145-153

ABSTRACT: V. T. Kas'yanov's graphoanalytical method for determining synchronous-generator characteristics (Elektrichestvo, 1947, Nr 10, pp 56-58) can also be used for calculating parallel operation of synchronous machinery. Substituting the resistive and reactive voltage drops for the system voltage components, it is easy to obtain, from the vector diagram, analytical expressions for direct-axis  $E_{id}$  of the internal EMF and for the angle between the current vector and the direct-axis EMF. From this data and from no-load and short-circuit characteristics, the resulting magnetizing force of

Card 1/2

SOV/112-59-4-6998

V. T. Kas'yanov's Method in Calculating Steady-State Conditions of Salient- . . . .  
the machine and the angle  $\beta$  of the "Kas'yanov's triangle" can be determined;  
the triangle's legs are:  $E_{id}$  and the direct-axis magnetizing force due to  
armature reaction. This method can be fully used for calculating the U-shape  
curves if the value and phase of the stator current are specified. Load  
characteristics can also be computed from the specified field magnetizing force  
and the power-system voltage because each point of the no-load characteristic  
has corresponding values of  $\beta$  and  $E_{id}$ ; all necessary parameters can be  
determined from  $\beta$  and  $E_{id}$ .

L.R.Sh.

Card 2/2

PLEASE I BOOK EXPLOITATION 809/4795

Stromy elektromagnetylny transportnykh svyaz', 3, (Electrical Supply Systems for Means of Transportation, 3) Msk, 1960. 224 p. (Series: Izv. TsSU, 9) Errata slip inserted. 1,000 copies printed.

**Editorial Board:** E.Ya. Yanovsky (Resp. Ed.), Candidate of Technical Sciences; V.V. Averb, Candidate of Technical Sciences; A.P. Kropotkin, Candidate of Technical Sciences; M.I. Yul'gar'yev, Tech. Ed.; Ya.Fenglin.

**PURPOSE:** This collection of articles is intended for technical personnel concerned with electrical supply systems for means of transportation.

**COVERING:** This collection is the third in a series of works of the Institute of Power and Electrical Engineering, Academy of Sciences Latvian SSR which deal with problems connected with the electrical supply system for transportation. Many of the articles deal with electric traction of electric mass-transit.

**Cherock, B.F.** Experimental Investigation of an Electric Automobile Installation Equipped With an A-C Generator With a Current-Control Parametric Circuit

### **Should: R.K. Study of Compounding-Circuit Operations in Generators With Variable Rotation Speed**

Apele, V.V. Maximum Power of a Synchronous Machine

SHIMAZU, J., and K.E. STRUTZKE. Three-Phase Inductor Converter with  
Positive-Torque Braking

Sketches, E.T. Three-Phase Inductor Generator With Two Seator-Tooth Pitches

Laurels, Cal. Recording the Temperature of Generators Fired Under a Tailroad Car During a Run

# Appendix A. Equivalent Scheme of a Toothed-Armature Magnetic Circuit and Its Computation

**Eschewer, T.A., and T.A. Selyemsky. Use of Selenium Rectifiers in Automobile Electrical Equipment**

**IMPLICITLY WITH A D-C OUTPUT**

In view of the large number of types of modulations and ab-

determination of their estimated performance characteristics was fairly complicated, a large number of experiments whose results would be difficult to utilize in practice. The author proposes to divide the problem of determining the characteristics of an amplifier into two stages, in order first to determine the estimated performance of an ideal rectifier, and secondly to take into account the effect of rectifier resistance. It is shown that, during amplifier operation at an active load, the principles of determining the determination of universal performance are the same for amplifiers operating through an ideal rectifier and for amplifiers with a  $\pi$ -network. The author discusses some general characteristics common to all magnetic amplifiers, e.g., the current gain factor, the power factor, the power gain factor, and the roles of steel and copper. The author concludes that the universal curves obtained are valuable for determining various characteristics of amplifiers operating with active loads and thus for carrying out a qualitative analysis of an amplifier in regard to its common parameters. The latter are helpful in evaluating how the load characteristic of an amplifier is affected by structural changes. There are 4 references, all Soviet.

SHTURMAN, G.I., prof., doktor tekhn.nauk; APSIT, V.V., kand.tekhn.nauk;  
YAKUBAYTIS, E.A., kand.tekhn.nauk; KROGERIS, A.F., kand.tekhn.nauk

Systems of electric supply for railroad cars. Zhel.dor.  
transp. 42 no.1:56-57 Ja '60. (MIRA 13:5)  
(Railroads--Electric equipment)

SHTURMAN, G.I.; LEVIN, N.N.

Principal equations and equivalent circuits of a magneto-type  
asynchronous motor. Izv. vys. ucheb. zav.; elektromekh. 4 no.2:  
27-33 '61. (MIRA 14:9)

(Electric motors, Induction)

LEVIN, N.N., inzh. (Riga); SHTURMAN, G.I., doktor tekhn.nauk, prof. (Riga)

Multiphase inductor machinery with unlike poles. Elektrichestvo  
no.2:52-55 F '62. (MIRA 15:2)

(Electric machinery—~~Polyphase~~)

SHTURMAN, G.I., doktor tekhn.nauk, prof. (Riga)

Balancing of the load of rotary phase dividers. Elektrichestvo  
no.5:50-53 My '62. (MIRA 15:5)

(Phase converters)

S/144/62/000/005/002/005  
D289/D308

AUTHOR: Shturman, G.I., Doctor of Technical Sciences,  
Professor

TITLE: Design of miniature induction torque motors

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Elektro-  
mekhanika, no. 5, 1962, 490 - 501

TEXT: Using expressions for specific losses the author deduces the  
basic equation: ✓

$$Dl = 1.96 \times 10^{-4} M \frac{f}{pQ_2} \quad (3)$$

where D - diameter; l - length; M - torque; f - frequency;  $Q_2$  - spe-  
cific losses/unit area; p - pairs of poles. The expression for  $Q_2$   
is determined using aluminum conductors. By using equivalent cir-  
cuits and circle diagram, the author deduces expressions for motor  
dimensions:

$$D = 0.712 \times 10^4 \frac{p}{A_2} \sqrt{Q_2 \delta / C_2 f} \quad (17)$$

Card 1/3



Design of miniature induction torque ... S/144/62/000/005/002/005  
D289/D308

where  $A_2$  - current per unit length of rotor rod;  $C_2$  - reactance/  
equiv. resistance ratio;  $\delta$  - gap.

$$l = 2.75 \times 10^{-8} M \frac{A_2}{p^2} \left(\frac{f}{Q_2}\right)^{3/2} \sqrt{\frac{C_2}{\delta}}. \quad (18)$$

The equations are analyzed and practical values given,  $\delta = 0.15 - 0.18$ ;  $C_2 = 1.05 - 1.3$ ; linear loading  $A_2 = 50 - 100$  A/cm which corresponds to torques of 100 - 1000 gm-cm. Stator parameters are given by

$$\pi D A_1 = \pi (D \pm h_n) h_n \Delta_1 K_{ma} \quad (22)$$

where  $K_{ma}$  - const. = 0.133 - 0.204 and  $A_1 = A_2 C_2 \sqrt{2}$ . Slot dimensions  $h_n$  for internal and external slots are

$$\left. \begin{aligned} & \sqrt{\left(\frac{D}{2}\right)^2 + \frac{D}{1} \frac{A_1}{K_{ma}}} - \frac{D}{2} \\ \text{and } \frac{D}{2} & - \sqrt{\left(\frac{D}{2}\right)^2 - \frac{D}{1} \frac{A_1}{K_{ma}}} \end{aligned} \right\} \quad (23)$$

Card 2/3

Design of miniature induction torque ... S/144/62/000/005/002/005  
D289/D308

Equations (22) and (23) use stator current density  $\Delta_1$  in connection with realistic size of slots. Equations are given for optimum number of turns and for gap flux density (250-800 gauss). Asynchronous torque is considered due to higher harmonics of the mmf. An overall characteristic is considered for several machines in cascade and a circle diagram is produced for the 1st, 3rd and 5th harmonic. The author concludes that the design method of polyphase machines of this type is based on preliminary choice of specific losses with formulas (17), (18) and (22), choice of the number of poles and basic dimensions corresponding to the optimum utilization of active space and estimation of the power consumption of the motor. There are 7 figures. ✓

ASSOCIATION: Rīzhskiy institut inzhenerov grazhdanskogo vozdušnogo flota (Riga Institute of Civil Aviation Engineers)

SUBMITTED: November 14, 1961

Card 3/3

S/144/62/000/006/003/009  
D230/D308

AUTHORS: Shturman, G.I., Doctor of Technical Sciences, Professor and Babanov, I.A., Aspirant

TITLE: Out-of-phase fed indicator selsyns

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Elektromekhanika, no. 6, 1962, 611-621

TEXT: Mean parameters for the transverse and longitudinal axes were determined experimentally for the following selsyns: CFC-1, CMC-1, CFOM-1, CMCM-1, A-3, AC-1 (SGS-1, SMS-1, SGSM-1, SMSM-1, A-3, DS-1). Each of the first four types has a short-circuited loop in the transverse axis, A-3 has no damping winding. Optimum parameter values obtain in the case of DS-1 selsyn. Gorev-Park equations for the transient processes of the synchronous machines were used as fundamental equations describing the selsyn processes. Practical expressions are obtained for the synchronizing moments of the primary and phase currents for out-of-phase fed selsyns, illustrating the characteristics of the working regimes of the

Card 1/2

Out-of-phase fed indicator selsyns

S/144/62/006/006/003/009  
D230/D308

selsyns under investigation. The permissible operating regions of the selsyns can be found from an expression in terms of the phase shift angle between the primary potentials of the transmitter and receiver, for which there is no e.m. moment on the transmitter axis at arbitrary error angles, and when the specific moment on the receiver has maximum value. The effect on a linear load of the phase shift between the primary potentials of the transmitter and receiver, and the system's angle of error is identical. Optimum construction of the contact selsyns in specified regions is given. There are 1 table and 5 figures.

ASSOCIATION: Rzhskiy institut inzhenerov grazhdanskogo vozushnogo flota (Riga Institute of the Civil Air Fleet)

SUBMITTED: September 28, 1961

Card 2/2

SHTURMAN, G.I., prof., doktor tekhn.nauk

Review of A.I. Bertinov's books "Aeronautical electric generators" and "Electric machinery in aeronautical automatic control systems." Izv. vys. ucheb. zav.; elektromekh. 5 no.5:581-582 162. (MIRA 15:5)

1. Zaveduyushchiy kafedroy aviatsionnykh elektricheskikh mashin Rzhskogo instituta inzhenerov Grazhdanskogo vozdushnogo flota imeni Leninskogo komсомola.

(Electric generators)  
(Electronics in aeronautics)  
(Bertinov, A.I.)

SHTURMAN, L. G.

Growth of hair between roentgen irradiation and epilation. Vest.  
vener., Moskva no.5:40-44 Sept-Oct 1951. (CML 21:1)

1. Of the Department of Skin and Venereal Diseases (Head --  
P. V. Kozhevnikov, Corresponding Member of the Academy of  
Medical Sciences USSR), Leningrad Institute for the Advanced  
Training of Physicians.

DISSERTATION, I. I., 1947

Grad. Tech. Sci.

Dissertation: "Hydroelectric Motor and its Application in Petroleum Industry."  
Moscow Order of the Interior Red Banner Petroleum Institute Academician I. M. Gubkin,  
24 Jan 48.

CC: Vecherka Moskva, Jun, 1947 (Project #17636)

PA 65/49T39

USSR/Electricity - Motors, Induction Jul 49  
Pumping Machinery

"Power Indexes for Induction Motors Used in  
Driving Pumping Equipment," L. I. Shurman,  
6 pp

"Energet Byul" No 7 - pp 13-14.

Works out simple formulas for evaluating the  
efficiency of deep-well pumping units. Illus-  
trates example of induction motor drive with  
normal and high slip. Concludes that motor with  
increased slip is more efficient for such appli-  
cations than motor with normal slip despite

65/49T39

USSR/Electricity - Motors, Induction Jul 49  
(Contd.)

latter's higher efficiency at constant loads.  
Compares data in diagrams and tables.

65/49T39

SHURMAN, L. I.



USSR/Electricity - Drives, Oil Well Pump .. Mar 50  
Motors, Induction

"Problems Relating to the Power Characteristics of Induction Motors in Drives for Oil Well Pumps," I. I. Shturman, 3 pp

"Energet Byul" No 3

Shturman, in previous article, gave method for finding efficiency and power factor of induction motor on fluctuating load and also true losses in feeding system (see "Energeticheskiy Byulleten'" No 7, 1949). O. P. Shishkin,

161T31

USSR/Electricity - Drives, Oil Well Pump (Contd) Mar 50

in advocating advantages of motor with increased slip for pumping equipment, impugned Shturman's method /see PA 65/49T39/. Shturman refutes accusations herein.

161T31

PA 161T31

SHTURMAN, I. I.

USSR/Electricity - Motors, Induction Aug 51

"Determination of the Efficiency and Power Factor of Induction Motors Under Continuously Changing Load," L. I. Shturman, Cand Tech Sci, O. I. Zolotarev, Cand Tech Sci, All-Union Sci Res Petroleum Inst

"Elektrichestvo" No 8, pp 43-47

Derives formulas for the efficiency and power factor of an induction motor operating under continuously changing load. These formulas permit one to judge the efficiency of various types of motors if the efficiency and power

196T28

USSR/Electricity - Motors, Induction Aug 51 .  
(Contd)

under const load and the form factor of the power curve on the motor shaft are known.  
Submitted 15 Sep 50.

196T28

PA 196T28

SHTURMAN, L. I.

CONFIDENTIAL, -1.  
  
B. T. R.  
Vol. 3 No. 4  
Apr. 1954  
Heat Power

2  
① Prop  
  
~~3065 Investigation of Effective Joint Operation of In-~~  
~~ternal Combustion Engines in a Group Drive. (Russian.)~~  
~~I. I. Shvachin. Energeticheskii Biulleten, 1953, no. 10, Oct.,~~  
~~p. 1-8.~~  
Discusses results of first experiments in drilling installations.  
Graphs, diagrams.

6/3/54  
LM